Bilateral bloody nipple discharge in a male infant: sonographic findings and proposed diagnostic approach

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Abstract

Bloody nipple discharge is an uncommon finding in the pediatric population, without clear diagnostic and therapeutic guidelines established. We noted a case of a 3-month-old male infant who presented with bilateral blood-stained nipple discharge, with unremarkable medical history. Sonographic findings revealed bilaterally dilated ducts and cysts with mixed iso- and hypoechoic intraductal content. Possible causes of this condition include hyperlaxity syndrome with decreased function of elastic fibers and fibrocystic changes in breasts, and unusual response to maternal hormones, transferred to the neonate either transplacentally or through breastfeeding. Given the most probable benign etiology and self-limiting nature of the described condition, a conservative approach is suggested. Unnecessary invasive procedures should be avoided.

Keywords: bloody nipple discharge; breast ultrasound; infant.

Introduction

Bloody nipple discharge is an uncommon finding in the pediatric population, without clear diagnostic and therapeutic guidelines established (1–4). It is thought to be a self-limiting benign process related to hormonal adaptation of the infant in the early age. Although benign, the condition causes severe anxiety in parents. There are very few cases described in the literature, with only one reporting sonographic findings (5).

Case report

We report a case of a 3-month-old boy presenting with bilateral sanguinous discharge without signs of significant breast hypertrophy or infection associated. The discharge was bloody at the time it was noticed. The parents denied any manipulation with the breast tissue. Medical history was unremarkable. However, family medical history included breast cancer in the patient’s mother’s family, and generalized hyperlaxity syndrome. The child was breastfed.

On the physical examination, there were small palpable masses in both breasts, with no significant enlargement of breast tissue. There were small blood stains at the levels of nipples on the patient’s shirt.

Breast sonography was performed using a Voluson 730 Pro scanner with a SP 10–16 MHz linear probe (GE Medical Systems, Milwaukee, WI, USA). Sonographic findings revealed bilaterally dilated ducts measuring up to 4 mm in diameter. In the retromammar region of the left breast, several cysts with mixed iso- and hypoechoic intraductal content were found (Figure 1A–C).

All endocrinologic findings and hormone level results were within reference ranges.

Discussion

There are several cases of bloody nipple discharge reported in the literature, with only one case describing sonographic findings (5). In a few cases, biopsy and mastectomy were performed, showing the same type of benign duct ectasia seen in adults (4, 6–8). It is a benign process of duct dilatation surrounded by periductal fibrous tissue and inflammatory reaction.

Several etiologic factors were taken into account, without clear evidence to favor any of these (9). It is thought that the cause can be an unusual response to maternal hormones, transferred to the neonate either transplacentally or through breastfeeding. There are no studies found in the literature concerning the type of feeding in relation to bloody nipple discharge. However, Kelly et al. (3) reported spontaneous restitution of the discharge 1 month after discontinuation of breastfeeding. Nevertheless, this state was documented in both breast- and formula-fed infants, which downgrades the role of breastfeeding in this condition.

There are some additional clinical conditions that can lead to bloody nipple discharge.

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Recently, some work has been done in defining the relation between hyperlaxity syndrome with decreased function of elastic fibers and fibrocystic changes in breasts. These changes result in increased fragility of capillaries, which may be the cause of the hemorrhagic content of nipple discharge (10). Mastitis commonly presents with breast pain and erythema, but rarely includes bloody nipple discharge. Also, it is followed by clear signs of infection and usually occurs before 6 weeks of age. To the best of our knowledge, breast malignancy, which would be the most common cause of bloody discharge in adults, in infancy has not been described in the literature (10). Finally, pituitary adenomas often present with nipple discharge, but it is usually milky and bilateral.

Given the most probable benign etiology and self-limiting nature of the described condition, a conservative approach is suggested. Diagnostic protocol should, however, include Gram staining, cell count and culture of the discharge, determination of serum levels of specific hormones (prolactin, estradiol, thyrotropin), and ultrasound follow-up. When hyperlaxity syndrome is suspected, copper, which is essential for synthesis of elastin fibers, can be applied orally. Pediatric surgical consultation and therapy should be considered in case of a sonographic finding of mass and abnormality. Otherwise, unnecessary invasive procedures should be avoided.

References